

## AMENDMENTS TO THE CLAIMS

Please cancel claims 1-62.

Please add new claims 63-127, as shown in the following list of claims:

- 1.-62. (Canceled).
63. (New) A pharmaceutical composition comprising an ApoA-I agonist and a pharmaceutically acceptable carrier, excipient or diluent.
64. (New) The pharmaceutical composition of Claim 63 which is a lyophilized powder.
65. (New) The pharmaceutical composition of Claim 63 in which is a solution.
66. (New) The pharmaceutical composition of Claim 63 wherein the ApoA-I agonist exhibits at least about 38% LCAT-activation activity as compared with human ApoA-I.
67. (New) The pharmaceutical composition of Claim 66 wherein the ApoA-I agonist is a 15 to 29-residue peptide or peptide analogue that forms an amphipathic  $\alpha$ -helix in the presence of lipids.
68. (New) The pharmaceutical composition of Claim 67 wherein the ApoA-I agonist exhibits 40% to 80% helicity in the presence of lipids.
69. (New) The pharmaceutical composition of Claim 68 wherein the ApoA-I agonist exhibits 80% helicity in the presence of lipids.
70. (New) The pharmaceutical composition of Claim 67 wherein the ApoA-I agonist comprises 40% to 70% hydrophobic residues.
71. (New) The pharmaceutical composition of Claim 70 wherein the ApoA-I agonist comprises 50% to 60% hydrophobic residues.

72. (New) The pharmaceutical composition of Claim 67 wherein the last C-terminal turn of the ApoA-I agonist  $\alpha$ -helix comprises a cluster of basic residues.
73. (New) The pharmaceutical composition of Claim 67 wherein the ApoA-I agonist comprises at least one acidic residue per turn.
74. (New) The pharmaceutical composition of Claim 67 wherein the ApoA-I agonist comprises 3-5 charged residues.
75. (New) The pharmaceutical composition of Claim 74 wherein the ApoA-I agonist comprises 4 charged residues.
76. (New) The pharmaceutical composition of Claim 67 wherein the net charge of the ApoA-I agonist is -1 to +1.
77. (New) The pharmaceutical composition of Claim 76 wherein the net charge of the ApoA-I agonist is 0.
78. (New) The pharmaceutical composition of Claim 67 in which the mean hydrophobic moment,  $\langle\mu_H\rangle$ , of the ApoA-I agonist is 0.45 to 0.65.
79. (New) The pharmaceutical composition of Claim 78 in which the mean hydrophobic moment,  $\langle\mu_H\rangle$ , of the ApoA-I agonist is 0.50 to 0.60.
80. (New) The pharmaceutical composition of Claim 67 in which the mean hydrophobicity,  $\langle H_o\rangle$ , of the ApoA-I agonist is -0.050 to -0.070.
81. (New) The pharmaceutical composition of Claim 80 in which the mean hydrophobicity,  $\langle H_o\rangle$ , of the ApoA-I agonist is -0.030 to -0.055.
82. (New) The pharmaceutical composition of Claim 67 in which the mean hydrophobicity of the hydrophobic face,  $\langle H_o^{pho}\rangle$ , of the ApoA-I agonist is 0.90 to 1.20.

83. (New) The pharmaceutical composition of Claim 82 in which the mean hydrophobicity of the hydrophobic face,  $\langle H_o^{pho} \rangle$ , of the ApoA-I agonist is 0.94 to 1.10.
84. (New) The pharmaceutical composition of Claim 67 in which the pho angle of the ApoA-I agonist is 160° to 220°.
85. (New) The pharmaceutical composition of Claim 84 in which the pho angle of the ApoA-I agonist is 180° to 200°.
86. (New) The pharmaceutical composition of Claim 63 wherein the ApoA-I agonist is in the form of an ApoA-I agonist-lipid complex said complex comprising an ApoA-I agonist and a lipid.
87. (New) The pharmaceutical composition of Claim 86 wherein the lipid is sphingomyelin.
88. (New) The pharmaceutical composition of Claim 86 which is a lyophilized powder.
89. (New) The pharmaceutical composition of Claim 86 which is a solution.
90. (New) The pharmaceutical composition of Claim 86 wherein the ApoA-I agonist-lipid complex is a small unilamellar vesicle.
91. (New) The pharmaceutical composition of Claim 86 wherein the ApoA-I agonist-lipid complex is a discoidal peptide-lipid complex.
92. (New) The pharmaceutical composition of Claim 91 wherein the discoidal peptide-lipid complex is comprises about 10 to about 14 ApoA-I agonists peripherally arranged in an antiparallel fashion about at least one lipid.
93. (New) The pharmaceutical composition of Claim 86 wherein the ApoA-I agonist - lipid complex has a lipid:peptide molar ratio of 30.

94. (New) The pharmaceutical composition of Claim 86 wherein the ApoA-I agonist comprises:

(i) a 22 to 29-residue peptide or peptide analogue which forms an amphipathic  $\alpha$ -helix in the presence of lipids and which comprises formula (I):

$Z_1-X_1-X_2-X_3-X_4-X_5-X_6-X_7-X_8-X_9-X_{10}-X_{11}-X_{12}-X_{13}-X_{14}-X_{15}-X_{16}-X_{17}-X_{18}-X_{19}-X_{20}-X_{21}-X_{22}-X_{23}-Z_2$

or a pharmaceutically acceptable salt thereof, wherein:

$X_1$  is Pro (P), Ala (A), Gly (G), Gln (Q), Asn (N), Asp (D) or D-Pro (p);

$X_2$  is an aliphatic residue;

$X_3$  is Leu (L) or Phe (F);

$X_4$  is an acidic residue;

$X_5$  is Leu (L) or Phe (F);

$X_6$  is Leu (L) or Phe (F);

$X_7$  is a hydrophilic residue;

$X_8$  is an acidic or a basic residue;

$X_9$  is Leu (L) or Gly (G);

$X_{10}$  is Leu (L), Trp (W) or Gly (G);

$X_{11}$  is a hydrophilic residue;

$X_{12}$  is a hydrophilic residue;

$X_{13}$  is Gly (G) or an aliphatic residue;

$X_{14}$  is Leu (L), Trp (W), Gly (G) or Nal;

$X_{15}$  is a hydrophilic residue;

$X_{16}$  is a hydrophobic residue;

$X_{17}$  is a hydrophobic residue;

$X_{18}$  is Gln (Q), Asn (N) or a basic residue;

$X_{19}$  is Gln (Q), Asn (N) or a basic residue;

$X_{20}$  is a basic residue;

$X_{21}$  is an aliphatic residue;

$X_{22}$  is a basic residue;

$X_{23}$  is absent or a basic residue;

$Z_1$  is  $H_2N-$  or  $RC(O)NR'-$ ;

$Z_2$  is  $-C(O)NRR$ ,  $-C(O)OR$  or  $-C(O)OH$  or a salt thereof;

each R is independently -H, (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>1</sub>-C<sub>6</sub>) alkenyl, (C<sub>1</sub>-C<sub>6</sub>) alkynyl,

(C<sub>5</sub>-C<sub>20</sub>) aryl, (C<sub>6</sub>-C<sub>26</sub>) alkaryl, 5-20 membered heteroaryl or 6-26 membered

alkheteroaryl or a 1 to 7-residue peptide or peptide analogue in which one or more

bonds between residues 1-7 are independently a substituted amide, an isostere of an amide or an amide mimetic;

each R' is independently -H, (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>1</sub>-C<sub>6</sub>) alkenyl, (C<sub>1</sub>-C<sub>6</sub>) alkynyl, (C<sub>5</sub>-C<sub>20</sub>) aryl, (C<sub>6</sub>-C<sub>26</sub>) alkaryl, 5-20 membered heteroaryl or 6-26 membered alkheteroaryl; and

each “—” between residues X<sub>1</sub> through X<sub>23</sub> independently designates an amide linkage, a substituted amide linkage, an isostere of an amide or an amide mimetic;

(ii) a 15 to 26- residue peptide or peptide analogue according to formula (I) which forms an amphipathic  $\alpha$ -helix in the presence of lipids wherein one or two helical turns are deleted from formula (I), wherein a helical turn consists of 3 to 4 consecutive residues selected from residues X<sub>1</sub> to X<sub>23</sub> of formula (I);

(iii) a 22 to 29- residue altered peptide or peptide analogue according to formula (I) in which at least one of residues X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>7</sub>, X<sub>8</sub>, X<sub>9</sub>, X<sub>10</sub>, X<sub>11</sub>, X<sub>12</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>15</sub>, X<sub>16</sub>, X<sub>17</sub>, X<sub>18</sub>, X<sub>19</sub>, X<sub>20</sub>, X<sub>21</sub>, X<sub>22</sub> or X<sub>23</sub> is conservatively substituted with another residue; or

a N-terminally blocked form, a C-terminally blocked form, or an N- and C-terminally blocked form of formula (I).

95. (New) The pharmaceutical composition of Claim 94 wherein X<sub>7</sub> of the ApoA-I agonist is a basic residue.
96. (New) The pharmaceutical composition of Claim 94 wherein X<sub>3</sub>, X<sub>6</sub>, X<sub>9</sub> and X<sub>10</sub> of the ApoA-I agonist are hydrophobic residues.
97. (New) The pharmaceutical composition of Claim 94 wherein the ApoA-I agonist is a 22-23 residue peptide or peptide analogue according to formula (I).
98. (New) The pharmaceutical composition of Claim 97 comprising an ApoA-I agonist according to formula (I) wherein:  
the “—” between residues X<sub>1</sub> through X<sub>23</sub> designates -C(O)NH-;

Z<sub>1</sub> is H<sub>2</sub>N-; and

Z<sub>2</sub> is -C(O)OH or a salt thereof.

99. (New) The pharmaceutical composition of Claim 98 comprising an ApoA-I agonist according to formula (I) wherein:

X<sub>1</sub> is Pro (P), Ala (A), Gly (G), Asn (N), Gln (Q), Asp (D) or D-Pro (p);

X<sub>2</sub> is Ala (A), Val (V) or Leu (L);

X<sub>3</sub> is Leu (L) or Phe (F);

X<sub>4</sub> is Asp (D) or Glu (E);

X<sub>5</sub> is Leu (L) or Phe (F);

X<sub>6</sub> is Leu (L) or Phe (F);

X<sub>7</sub> is Lys (K), Arg (R) or Orn;

X<sub>8</sub> is Asp (D) or Glu (E);

X<sub>9</sub> is Leu (L) or Gly (G);

X<sub>10</sub> is Leu (L), Trp (W) or Gly (G);

X<sub>11</sub> is Asn (N) or Gln (Q);

X<sub>12</sub> is Glu (E) or Asp (D);

X<sub>13</sub> is Gly (G), Leu (L) or Aib;

X<sub>14</sub> is Leu (L), Nal, Trp (W) or Gly (G);

X<sub>15</sub> is Asp (D) or Glu (E);

X<sub>16</sub> is Ala (A), Nal, Trp (W), Leu (L), Phe (F) or Gly (G);

X<sub>17</sub> is Gly (G), Leu (L) or Nal;

X<sub>18</sub> is Gln (Q), Asn (N), Lys (K) or Orn;

X<sub>19</sub> is Gln (Q), Asn (N), Lys (K) or Orn;

X<sub>20</sub> is Lys (K) or Orn;

X<sub>21</sub> is Leu (L);

X<sub>22</sub> is Lys (K) or Orn; and X<sub>23</sub> is absent or Lys (K).

100. (New) The pharmaceutical composition of Claim 99 wherein X<sub>23</sub> of the ApoA-I agonist is absent.

101. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist according to formula (I) wherein one of X<sub>18</sub> or X<sub>19</sub> is Gln (Q) or Asn (N) and the other of X<sub>18</sub> or X<sub>19</sub> is Lys (K) or Orn.

102. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist according to formula (I) wherein each of X<sub>9</sub>, X<sub>10</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>16</sub> and X<sub>17</sub> is Gly (G) and the others are other than Gly (G).

103. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist selected from the group consisting of:

peptide 1	PVLDLDFRELLNELLEZLKQKLK	(SEQ ID NO:1)
peptide 2	GVLDLDFRELLNELLEALKQKLKK	(SEQ ID NO:2)
peptide 3	PVLDLDFRELLNELLEWLKQKLK	(SEQ ID NO:3)
peptide 4	PVLDLDFRELLNELLEALKQKLK	(SEQ ID NO:4)
peptide 5	pVLDLDFRELLNELLEALKQKLKK	(SEQ ID NO:5)
peptide 6	PVLDLDFRELLNEXLEALKQKLK	(SEQ ID NO:6)
peptide 7	PVLDLDFKELLNELLEALKQKLK	(SEQ ID NO:7)
peptide 8	PVLDLDFRELLNEGLEALKQKLK	(SEQ ID NO:8)
peptide 9	PVLDLDFRELGNELLEALKQKLK	(SEQ ID NO:9)
peptide 10	PVLDLDFRELLNELLEAZKQKLK	(SEQ ID NO:10)
peptide 11	PVLDLDFKELLQELLEALKQKLK	(SEQ ID NO:11)
peptide 12	PVLDLDFRELLNELLEAGKQKLK	(SEQ ID NO:12)
peptide 13	GVLDLDFRELLNEGLEALKQKLK	(SEQ ID NO:13)
peptide 14	PVLDLDFRELLNELLEALOQOLO	(SEQ ID NO:14)
peptide 15	PVLDLDFRELWNELLEALKQKLK	(SEQ ID NO:15)
peptide 16	PVLDLLRELLNELLEALKQKLK	(SEQ ID NO:16)
peptide 17	PVLELFKELLQELLEALKQKLK	(SEQ ID NO:17)
peptide 18	GVLDLDFRELLNELLEALKQKLK	(SEQ ID NO:18)
peptide 19	pVLDLDFRELLNEGLEALKQKLK	(SEQ ID NO:19)
peptide 20	PVLDLDFREGLNELLEALKQKLK	(SEQ ID NO:20)
peptide 21	pVLDLDFRELLNELLEALKQKLK	(SEQ ID NO:21)
peptide 22	PVLDLDFRELLNELLEGLKQKLK	(SEQ ID NO:22)
peptide 23	PLLELFKELLQELLEALKQKLK	(SEQ ID NO:23)
peptide 24	PVLDLDFRELLNELLEALQKKLK	(SEQ ID NO:24)
peptide 25	PVLDLDFRELLNEXLEALKQKLK	(SEQ ID NO:25)
peptide 26	PVLDLDFRELLNELLELLKQKLK	(SEQ ID NO:26)
peptide 27	PVLDLDFRELLNELZEALKQKLK	(SEQ ID NO:27)
peptide 28	PVLDLDFRELLNELWEALKQKLK	(SEQ ID NO:28)

peptide 29	AVLDLFRELLNELLEALKQKLK	(SEQ ID NO:29)
peptide 123	QVLDLFRELLNELLEALKQKLK	(SEQ ID NO:123)
peptide 124	PVLDLFOELLNELLEALOQOLO	(SEQ ID NO:124)
peptide 125	NVLDLFRELLNELLEALKQKLK	(SEQ ID NO:125)
peptide 126	PVLDLFRELLNELGEALKQKLK	(SEQ ID NO:126)
peptide 127	PVLDLFRELLNELLELLKQKLK	(SEQ ID NO:127)
peptide 128	PVLDLFRELLNELLEFLKQKLK	(SEQ ID NO:128)
peptide 129	PVLELFNDLLRELLEALQKKLK	(SEQ ID NO:129)
peptide 130	PVLELFNDLLRELLEALKQKLK	(SEQ ID NO:130)
peptide 131	PVLELFKELLNELLDALRQKLK	(SEQ ID NO: 131)
peptide 132	PVLDLFRELLNLEALQKKLK	(SEQ ID NO:132)
peptide 133	PVLELFFERLLEDLLQALNKKLK	(SEQ ID NO:133)
peptide 134	PVLELFFERLLEDLLKALNQKLK	(SEQ ID NO:134)
peptide 135	DVLDLFRELLNELLEALKQKLK	(SEQ ID NO:135)
peptide 136	PALELFKDLLQELLEALKQKLK	(SEQ ID NO:136)
peptide 137	PVLDLFRELLNEGLEAZKQKLK	(SEQ ID NO:137)
peptide 138	PVLDLFRELLNEGLEWLKQKLK	(SEQ ID NO:138)
peptide 139	PVLDLFRELWNEGLEALKQKLK	(SEQ ID NO:139)
peptide 140	PVLDLFRELLNEGLEALOQOLO	(SEQ ID NO:140)
peptide 141	PVLDFFRELLNEGLEALKQKLK	(SEQ ID NO:141)
peptide 142	PVLELFRELLNEGLEALKQKLK	(SEQ ID NO:142)

and the N-terminal acylated and/or C-terminal amidated or esterified forms thereof, wherein X is Aib; Z is Nal; and O is Orn.

104. (New) The pharmaceutical composition of Claim 103 comprising an ApoA-I agonist that is SEQ ID NO: 4.
105. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist that is an altered form of formula (I).
106. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist wherein residues X<sub>2</sub>, X<sub>3</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>9</sub>, X<sub>10</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>16</sub>, X<sub>17</sub> and X<sub>21</sub> are fixed according to formula I and at least one of residues X<sub>1</sub>, X<sub>4</sub>, X<sub>7</sub>, X<sub>8</sub>, X<sub>11</sub>, X<sub>12</sub>, X<sub>15</sub>, X<sub>18</sub>, X<sub>19</sub>, X<sub>20</sub> and X<sub>22</sub> is conservatively substituted with another residue.



107. (New) The pharmaceutical composition of Claim 105 comprising an ApoA-I agonist wherein:

X<sub>1</sub> is Pro (P), D-Pro (p), Gly (G) or Ala (A);

X<sub>2</sub> is Ala (A), Leu (L) or Val (V);

X<sub>3</sub> is Leu (L) or Phe (F);

X<sub>5</sub> is Leu (L) or Phe (F);

X<sub>6</sub> is Leu (L) or Phe (F);

X<sub>9</sub> is Leu (L) or Gly (G);

X<sub>10</sub> is Leu (L), Trp (W) or Gly (G);

X<sub>13</sub> is Leu (L), Gly (G) or Aib;

X<sub>14</sub> is Leu (L), Nal, Trp (W) or Gly (G);

X<sub>16</sub> is Ala (A), Nal, Trp (W), Gly (G), Leu (L) or Phe (F);

X<sub>17</sub> is Leu (L), Gly (G) or Nal;

X<sub>21</sub> is Leu (L); and

at least one of X<sub>4</sub>, X<sub>7</sub>, X<sub>8</sub>, X<sub>11</sub>, X<sub>12</sub>, X<sub>15</sub>, X<sub>18</sub>, X<sub>19</sub>, X<sub>20</sub>, X<sub>22</sub> and X<sub>23</sub> is conservatively substituted with another residue.

108. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist wherein X<sub>4</sub>, X<sub>7</sub>, X<sub>8</sub>, X<sub>11</sub>, X<sub>12</sub>, X<sub>15</sub>, X<sub>18</sub>, X<sub>19</sub> and X<sub>22</sub> are fixed according to formula I and at least one of residues X<sub>2</sub>, X<sub>3</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>9</sub>, X<sub>10</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>16</sub>, X<sub>17</sub>, X<sub>20</sub> and X<sub>21</sub> is conservatively substituted with another residue.

109. (New) The pharmaceutical composition of Claim 108 comprising an ApoA-I agonist wherein:

X<sub>4</sub> is Asp (D) or Glu (E);

X<sub>7</sub> is Lys (K), Arg (R) or Orn;

X<sub>8</sub> is Asp (D) or Glu (E);

X<sub>11</sub> is Asn (N) or Gln (Q);

X<sub>12</sub> is Glu (E) or Asp (D);

X<sub>15</sub> is Asp (D) or Glu (E);

X<sub>18</sub> is Gln (Q), Asn (N), Lys (K) or Orn;

X<sub>19</sub> is Gln (Q), Asn (N), Lys (K) or Orn;

X<sub>20</sub> is Lys (K) or Orn;

X<sub>22</sub> is Lys (K) or Orn;

X<sub>23</sub> is absent or Lys (K); and

at least one of X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>9</sub>, X<sub>10</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>16</sub>, X<sub>17</sub> and X<sub>21</sub> is conservatively substituted with another residue.

110. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist wherein X<sub>3</sub> is Leu (L) or Phe (F), X<sub>6</sub> is Phe (F), X<sub>9</sub> is Leu (L) or Gly (G), and X<sub>10</sub> is Leu (L), Trp (W) or Gly (G).
111. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist wherein one helical turn is deleted.
112. (New) The pharmaceutical composition of Claim 94 comprising an ApoA-I agonist wherein three, four, six, seven or eight residues X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>7</sub>, X<sub>8</sub>, X<sub>9</sub>, X<sub>10</sub>, X<sub>11</sub>, X<sub>12</sub>, X<sub>13</sub>, X<sub>14</sub>, X<sub>15</sub>, X<sub>16</sub>, X<sub>17</sub>, X<sub>18</sub>, X<sub>19</sub>, X<sub>20</sub>, X<sub>21</sub> and X<sub>22</sub> are deleted.
113. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein 3 consecutive residues are deleted.
114. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein 4 consecutive residues are deleted.
115. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein two non-contiguous sets of 3 consecutive residues are deleted.
116. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein two non-contiguous sets of 4 consecutive residues are deleted.
117. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein one set of 3 consecutive residues and one set of 4 consecutive residues are deleted.
118. (New) The pharmaceutical composition of Claim 112 comprising an ApoA-I agonist wherein 6, 7 or 8 consecutive residues are deleted.

119. (New) A method of treating dyslipidemia in a subject in need of such treatment, said method comprising administering to the subject an effective amount of the pharmaceutical composition of Claim 63 or 86.
120. (New) The method of Claim 119 wherein the dyslipidemia is atherosclerosis.
121. (New) The method of Claim 119 wherein the dyslipidemia is cardiovascular disease.
122. (New) The method of Claim 119 wherein said subject is human.
123. (New) The method of Claim 119 wherein the pharmaceutical composition is administered intravenously.
124. (New) The method of Claim 119 wherein the pharmaceutical composition is administered once weekly.
125. (New) A method of treating septic shock in a subject in need of such treatment, said method comprising administering to the subject an effective amount of the pharmaceutical composition of Claim 63 or 86.
126. (New) The method of Claim 125 wherein said subject is human.
127. (New) The method of Claim 125 wherein the pharmaceutical composition is administered intravenously.